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Supporting Information for

Variation of molecular ions in the inner magnetosphere observed by the Arase satellite

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Introduction

Nagatani et al. analyzed the data from the Arase LEPI/TOF instrument. Table S1 includes the data and time when molecular ions were detected by Arase LEPI/TOF from 2017 to 2023.

Table S1. Date and time when molecular ions were observed, CIR/CME distinction, time of SC onset, time of maximum dynamic pressure, maximum dynamic pressure, minimum SML value, and minimum Sym-H value for events where molecular ions were detected.

TOF mode observation start time		TOF mode observation end time		CIR or CME	Time of SC onset	Time of maximum dynamic pressure		Maximum dynamic pressure [nPa]	Minimum SYM-H [nT]	Minimum SML [nT]
2017/4/4	18:55:16	2017/4/4	23:16:56	CIR		2017/4/4	4:48:00	11.75	-50	-640
2017/4/5	4:30:14	2017/4/5	8:48:10	CIR						
2017/5/28	15:16:14	2017/5/28	19:49:54	CME	2017/5/27 15:34	2017/5/27	20:54:00	16.41	-142	-1092
2017/5/29	10:11:13	2017/5/29	14:45:41	CME						
2017/6/3	13:14:16	2017/6/3	17:49:43	CIR		2017/6/1	17:27:00	12.35	-24	-242
2017/8/17	11:55:11	2017/8/17	16:09:44	CIR		2017/8/17	12:28:00	6.16	-36	-629
2017/9/8	13:53:16	2017/9/8	18:11:51	CME	2017/9/7 23:00	2017/9/7	1:33:00	12.46	-146	-1160
2019/7/10	17:23:19	2019/7/10	21:36:04	CIR	2019/7/8 19:22	2019/7/8	21:36:00	19.14	-42	-507
2019/9/27	22:32:19	2019/9/28	0:39:55	CIR	2019/9/27 5:55	2019/9/27	10:46:00	12.41	-61	-125
2019/10/30	15:45:18	2019/10/30	20:00:01	inter stream?		2019/10/30	17:17:00	13.37	-42	-203
2021/2/20	16:47:17	2021/2/20	20:59:53	CIR		2021/2/19	12:41:00	8.53	-47	-412
2022/3/14	8:58:17	2022/3/14	13:18:59	CME	2022/3/13 10:47	2022/3/13	12:23:00	17.67	-114	-626
2022/8/8	11:45:13	2022/8/8	15:50:59	CIR		2022/8/8	1:57:00	7.72	-69	-578
2023/1/4	17:25:19	2023/1/4	21:47:45	CME		2023/1/4	15:04:00	10.62	-74	-519
2023/4/25	1:38:22	2023/4/25	5:45:46	CME		2023/4/24	3:44:00	18.11	-233	-995
2023/9/18	19:39:16	2023/9/19	0:00:02	CME		2023/9/18	15:43:00	9.39	-81	not available